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10/589,354

08/11/2006

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EXAMINER

RHODES, JR, LEON W

ART UNIT

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4183

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,354	Applicant(s) IWASAKI, HIROYUKI	
	Examiner LEON W. RHODES, JR	Art Unit 4183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/11/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/11/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Camera system with current and discharge controlled illumination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 4 - 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kishimoto et al (US Patent 5,895,128), hereafter Kishimoto.
4. With regard to claims 4, 5, and 7: Kishimoto teaches in **figures 8 – 12** below (which use the flash system detailed in **figures 1-7**), a camera system comprising:
 - a. A discharge control-type first illuminating device **3** (xenon discharge tube for emitting flash light, column 6 lines 3-4) that emits illuminating light toward a subject in response to a light emission instruction issued after light emission is enabled (column 6, lines 27-32);
 - b. A current controlled second illuminating device **501** (light emitting elements, including Red and Blue LEDs, column 3 lines 26-27) that emits

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illuminating light toward the subject in response to the light emission instruction (column 3, lines 65-67 and column 4 lines 1-2); and

c. An illumination control device **11** (flash CPU, operation described in column 9, lines 26-33) in sync with the opening of the shutter. Kishimoto does not disclose any modification to the flash sequence depending on the shutter speed relative to a shutter sync speed or any other speed, so both illumination devices in the flash will inherently always trigger as described when flash photographing is activated, without regard to if the selected shutter speed is above the synchronous speed (column 9 lines 13-19)

The limitations that the illumination control device

i. Claim 4:

(1) issues the light emission instruction to one of the first illuminating device and the second illuminating device if a shutter speed for a photographing operation is set equal to or lower than a synchronous speed for the first illuminating device

(2) issues the light emission instruction to the second illuminating device if the shutter speed for the photographing operation is set higher than the synchronous speed.

ii. Claim 5

(3) issues the light emission instruction to the second illuminating device if the shutter speed for the photographing operation is set equal to or lower than a predetermined speed that is lower than the synchronous speed for the first illuminating device and

(4) issues the light emission instruction to the first illuminating device if the shutter speed for the photographing operation is set higher than the predetermined speed and also equal to or lower than the synchronous speed.

iii. Claim 7:

(3) issues the light emission instruction to one of the first illuminating device and the second illuminating device if the shutter speed for the photographing operation is set equal to or lower than a predetermined speed that is lower than the synchronous speed for the first illuminating device

(4) issues the light emission instruction to the first illuminating device if the shutter speed for the photographing operation is set higher than the predetermined speed and also equal to or lower than the synchronous speed.

do not require that the first or second illuminating device be triggered exclusively for each situation claimed. In Hishimoto, both of the illuminating devices are triggered when the photograph is taken; meaning that one of the first and second illuminating device receives the light emission instruction. The other receives the instruction as well, but that is not prohibited by the invention as claimed. When light emission is enabled on the camera of Hishimoto (controlled by standard exposure control values such as aperture and shutter speed, column 9 lines 13-19) both the first and second illuminating devices are issued the light emission instruction (column 9, lines 26-33). While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. (In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)). Because the camera of Hishimoto has an illumination control device which

meets the functionally described limitations set forth in the claims as detailed above, Hishimoto anticipates the invention as claimed.

FIG. 8

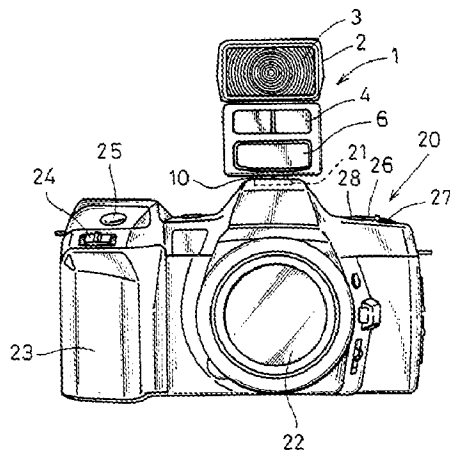


FIG. 9

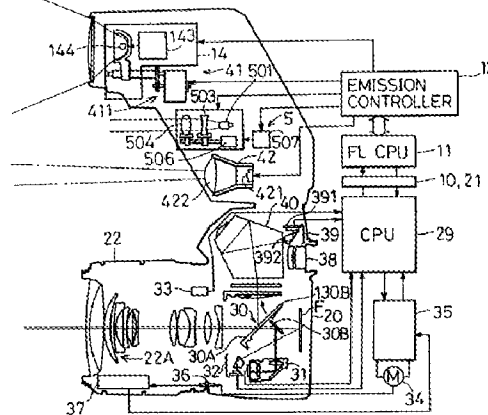


FIG. 10

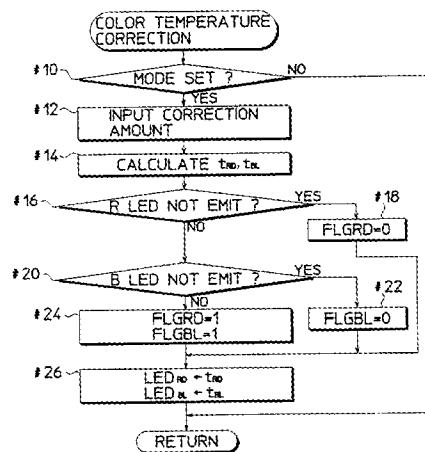


FIG. 11

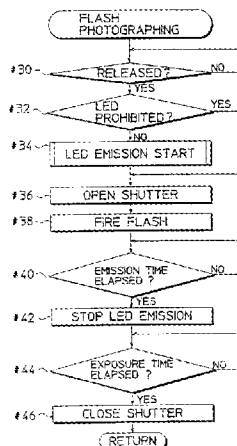
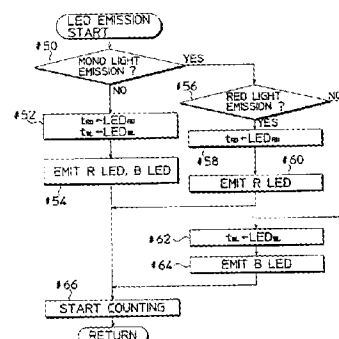


FIG. 12



5. With regard to claim 6: Hishimoto further teaches that the camera system as applied to claims 4 and 5 above:

- a. Has a photographing control device **29** (CPU) that issues an instruction for the second illuminating device to start light emission (the release signal, column 9 lines 28-31) in response to a photographing instruction (the full-stroke press of the release button, column 9 line 26), and
- b. Issues a light emission stop instruction for the second illuminating device when a predetermined length of time elapses following the exposure start (column 9, lines 36-39, where the flash CPU forcibly stops the emission based upon a signal from the main body. From Figure 9 it can be seen that signals from the main body must come from the CPU **29**, so therefore the CPU must be the part which is issuing the instruction, although it is not explicitly disclosed).

The statement that the photographing instruction is “sent when the shutter speed for the photographing operation is set equal to or less than the predetermined speed” is merely a statement of intended use and does not structurally affect the claimed device (i.e. the photographer can push the release button any time without changing the structure of the camera). A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. (Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)). Furthermore, the predetermined speed could be an arbitrarily chosen “infinitely fast” shutter speed, in which case the start instruction will always be sent, as is the case of Hishimoto.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the HP Photosmart 945 User's Manual, hereafter HP User's Manual (which describes the operation of the HP Photosmart 945 digital camera, available for sale on or before December 30th 2003 as evidenced by the PC Magazine article from that date), in view of Kishimoto.

8. With regard to claims 1, 3 and 9-10: The HP User's Manual teaches a camera system comprising a photographic mode selection device (**Page 10**, diagram label **2**, **Timer/Burst Button**) that selects one of a single-shot photographing mode for photographing an image for a single frame in response to a photographing instruction (standard mode, burst not activated, function is described on **Page 27**) and a continuous shooting mode (Burst mode) for photographing images for a plurality of frames in response to a photographing instruction (Burst mode function is described on **Page 35**). The HP User's Manual also teaches the use of a illuminating (flash) device that emits illuminating light toward a subject in response to a light emission instruction (the selection of flash setting, described on **Page 32**) after light emission is enabled (by the release of the pop-up flash, described at the top of page 32). The camera system is

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a digital camera, as shown on **page 1**, which has an imaging device that captures a subject (1/1.8 inch, 4:3 format Charge Coupled Device, **Page 135**) and outputs an imaging signal (for display on the microdisplay viewfinder, described on page 135 and **Page 23**, and storage in the memory card).

9. The single-shot photographing mode is a still image photographing mode, in that the single-shot photograph taken by the camera is a still image. Taking the broad interpretation of "dynamic" to mean marked by continuous activity, the continuous shooting mode is a dynamic image photographing mode, in that the camera is continuously in the activity of acquiring images until the buffer is full or until the photographer releases the shutter button. "For photographing a dynamic image" is a statement of intended use and does not structurally alter the apparatus as claimed.

10. The HP User's Manual does not teach that the illuminating device of the camera system comprises two illuminating devices; a first discharge control-type illuminating device and a second current controlled illuminating device, nor an illumination control device that issues a light emission instruction to the first illuminating device if the single-shot photographing mode has been selected by the photographing mode selection device and issues the light emission instruction to the second illuminating device if the continuous shooting mode has been selected by the photographing mode selection device, or that the second illuminating device repeatedly emits light and turns off light in synchronization with timing with which the imaging device captures an image for each frame. Nor does the HP User's Manual teach that the illumination control device controls the second (current controlled) illuminating device so as to repeatedly emit light

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and turn off light synchronously with the timing with which an image is captured for each frame by the imaging device while images for a plurality of frames are continuously captured in response to a photographing instruction.

11. Kishimoto teaches in **figures 13 and 14** a camera **50** with pop-up flash **51** which is an alternate embodiment of the camera flash and camera with flash of figures 1-12 (**column 11, line 55 - column 12 line 2**). Kishimoto teaches the use of a discharge type first illuminating device **51** (built in flash, **column 11 line 16**), with a charge circuit (shown in **figure 7**, section 14, including the DC/DC booster **142** and the capacitor **C_M**) and a current-controlled second illuminating device **52,53** (LED Units). Kishimoto teaches the use of an illumination control device (CPU of the camera, **column 11, line 58**) which issues the illumination commands to both the first and second illumination devices (**column 9, lines 26-33**, in this embodiment the flash CPU and camera CPU are combined into a single camera CPU, column 11, lines 55-62). The flash emission of both units occurs for the exposure, which meets the claimed limitation that the light emission instruction is issued to:

- a. the first illuminating device if the single-shot photographing mode has been selected by the photographing mode selection device, and
- b. the second illuminating device if the continuous shooting mode has been selected by the photographing mode selection device

because the claimed limitation does not require that each illumination device is exclusively activated for each situation, so the sending of the light emission instruction to both devices for both conditions satisfies the limitations. Kishimoto teaches that the

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second illuminating device emits light in synchronization with the timing with which the imaging device (the camera film or digital sensor which is inherent to the camera of Kishimoto) captures an image for each frame (**column 9, lines 30-36** describes that the LEDs are emitting at the time when the shutter is open, and turns off after a specified amount of time, **column 9, lines 35-36**). The flash setup of Kishimoto is used to correct for color temperature in flash photography quickly and easily (**abstract, lines 6-8**).

12. It would have been obvious to a person having ordinary skill in the art of the invention to modify the camera system with continuous photography mode with a flash of the HP User's Manual to use the prior art flash system of Kishimoto for the purpose of obtaining a camera which easily and quickly corrects for color temperature during flash photography. On **page 43** the HP User's Manual indicates that different lighting conditions are an issue during photography using the camera, which would further motivate a person having ordinary skill in the art at the time of the invention to combine the flash of Kishimoto with the camera. Because both the first and second illumination devices are used for each frame captured by the imaging device for a plurality of frames which are continuously captured by the imaging device as described above, in response to the photographing instruction, the illumination control device of the camera illumination control device controls the second (current controlled) illuminating device so as to repeatedly emit light and turn off light synchronously with the timing with which an image is captured for each frame by the imaging device while images for a plurality of frames are continuously captured in response to a photographing instruction.

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13. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the HP User's Manual and Kishimoto, in further view of Boyd et al, (US Patent 6,456,797 B1).

14. The HP User's Manual and Kishimoto as applied to claim 1 above, do not teach that the different illuminating devices may be selected based upon the level of the electrical charge in the charge circuit. Boyd teaches in **Figures 3-5** a flash system which determines the level of electrical charge in a charge circuit of a flash (see the last step in **Figure 4**) and switches to a different flash charge circuit based upon that level (see the 2nd and 3rd steps in **Figure 5**). The switching is intended to allow for faster flash firing (Abstract of Boyd). Boyd therefore shows that the switching of flash energy sources based upon electrical charge levels is known in the art. Because the combined camera of the HP User's Manual and Kishimoto has both a discharge-type flash and an LED flash, it would have been obvious to a person having ordinary skill in the art at the time of the invention to switch between using both the discharge-type illumination device (which has its own energy source, limited by the charge level in the capacitor) and the current controlled illumination device in combination, and the current-controlled illumination device by itself (which has an energy source, provided by the charge level of the battery **E** of figure 7 of Kishimoto) in order to allow for faster flash firing and image taking. The HP User's Manual suggestion that this is a problem which is in need of a solution (noting on page **35** that the flash results in a slower image acquisition rate) would further drive a person having ordinary skill in the art at the time of the invention to make this combination. While the current-controlled illumination device would not

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provide as much light as combination of it with the discharge-controlled illumination device, the person having ordinary skill in the art at the time of the invention would recognize that some additional illumination is better than no additional illumination, and that the color correcting function of the second illumination device would still function and provide a benefit without the first illumination device activating due to low charge level. The resulting device would inherently have an illumination control device which would be capable of issuing the light emission instruction to the second illuminating device instead of the first illuminating device if an extent of electrical charge achieved in the charge circuit is still under a predetermined level when a light emission instruction is to be issued to the first illuminating device, and therefore would satisfy the limitations of the claim as written.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kishimoto in view of the HP User's Manual.

16. With regard to claim 8: Kishimoto as applied to claim 7 above does not teach the emission of light when a front curtain sync photography is to be executed. The HP User's Manual discloses the use of a flash with front-curtain sync photography. On **page 33** the manual describes a **Night flash mode** which fires the flash and then continues to expose as if the flash had not fired to gather the background. This is a description of front-curtain sync photography, where the flash fires at the beginning of exposure and the exposure continues for a time after the flash has fired before ending exposure. It would have been obvious to a person having ordinary skill in the art at the

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time of the invention to modify the camera and flash of Kishimoto to use the front curtain sync mode of the HP user's Manual for the purpose of allowing the camera to continue to gather light from objects in the background of an image which are out of flash range, particularly in the case of nighttime photography. As described above, the camera system combination triggers both illuminating devices, so the first illumination device would receive the light emission instruction in the case of front sync photography. The second illumination device would as well, but that is not expressly prohibited by the claim as written.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Uenaka (US PGPub 2005/0089322 A1) teaches a camera with two current controlled illuminating devices, which repeatedly turn on and off in sync with the shutter of the camera.
- b. Voss et al (US PG Pub 2005/0157207 A1) teaches in figure 4 a camera with a first discharge controlled illuminating device and a second current controlled illuminating device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON W. RHODES, JR whose telephone number is

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571-270-5774. The examiner can normally be reached on Monday thru Thursday 07:00 thru 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Landau can be reached on 571-272-1731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 4183
December 29th 2008